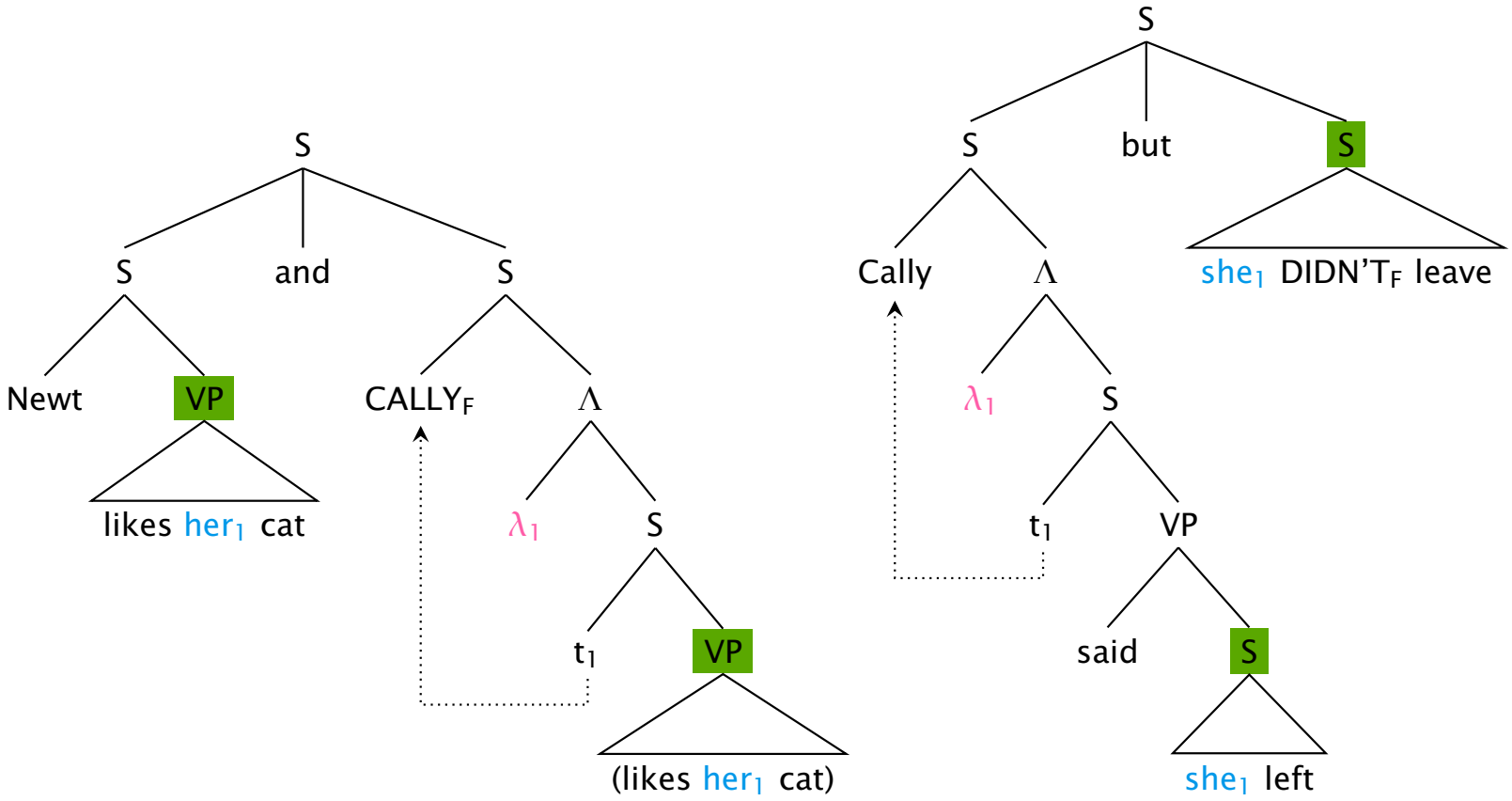
Givenness and local contexts

Simon Charlow, *Rutgers University*

University of Delaware Nov 1, 2019



the antinomy of the variable

Givenness is central to both. I'll make a few closely related claims about it today:

- Givenness is checked **compositionally**, via operators in syntax
- Givenness is **sensitive to the local context (assignment)**
- Constraints that inspect meaning must **leave bound variables *bound***

Take home: it's the *values* of variables that matter (not the little numbers).

- Dissolves puzzles as old as the ellipsis/focus literature
- Allows a simpler theory of ellipsis based on perfect identity
- Independent justification for various refinements of Givenness theory
- Sheds new light on impossible ACDs, focused bound pronouns

Givenness and anaphora

Damian blocked Steph, and then. . .

(1) SETH$_F$ blocked Steph. — just right

(2) *STEPH$_F$ blocked Damian. — underfocused

(3) *SETH$_F$ blocked STEPH$_F$. — overfocused

Schwarzschild's (1999) account of these facts:

- **Givenness:** If B isn't F-marked, it must be Given ⊣
- B is **Given** iff it has an antecedent $A \cong B := [\![A]\!] \in [\![B]\!]_f$ ⊣
- **AvoidF:** F-mark as little as possible (w/o violating Givenness) ⊣

F-mark all, and only, material in B without a parallel in A.

$[\![B]\!]_f$ is the focus set gotten by varying F-marked things in B (Rooth 1985, Kratzer 1991)

F-mark all, and only, the material in B that isn't parallel to A.

$$\text{Damian blocked Steph} \cong \text{SETH}_{\text{F}} \text{ blocked Steph}$$

$$[\![\text{Damian blocked Steph}]\!] \in [\![\text{SETH}_{\text{F}} \text{ blocked Steph}]\!]_{\text{f}}$$

$$\text{block}(\text{damian}, \text{steph}) \in \{\text{block}(x, \text{steph}) \mid x : \text{e}\} \quad \checkmark$$

We need a definition of Given that's explicit about assignments:

$$A \cong B \iff \forall g : [\![A]\!]^g \in [\![B]\!]^g_{\mathsf{f}}$$

For *any* way of understanding the free variables in A and B, $\cong$ holds.

Heim 1997, cf. Schwarzschild 1999. Occasionally $\exists g$ is used (Tomioka 2008, Griffiths 2019).

This $\cong$ treats different indices as different, even if we don't.

That is a problem. Suppose we're in a context where $g(1) = g(2) =$ mary.

(4) I saw her$_1$ and YOU$_F$ saw *HER$_{F,2}$. but $her_2 \Longrightarrow \not\cong$

(5) I saw Mary and YOU$_F$ saw *HER$_{F,2}$. but $her_2 \Longrightarrow \not\cong$

Our $\cong$ *requires* the pronouns to be focused, despite their values in context!

- Forbid 'redundant' assignments (Schlenker 2005)? Names are variables?

Schwarzschild 1993, 1999; see also Jacobson 2004, 2009

Intuitively, meaning in context is what matters (Schwarzschild 1993, 1999):

$$A \cong B \text{ at } g \iff [\![A]\!]^g \in [\![B]\!]^g_f$$

This makes better predictions when $g(1) = g(2) =$ mary.

(6) I saw her$_1$ and YOU$_F$ saw *HER$_{F,2}$. $her_2 \Longrightarrow \cong$

(7) I saw Mary and YOU$_F$ saw *HER$_{F,2}$. $her_2 \Longrightarrow \cong$

$A \cong B$ is checked at the **contextual g**. But this can **unbind variables**!

Even if $g(1) = \text{mary}$, $\cong$ in the red (though eventually not in the green).

(8) Newt likes her$_1$ cat. *CALLY$_F$ [λ_1 t$_1$ likes her$_1$ cat] too.

(9) Steph hopes I cite him$_1$. *SETH$_F$ [λ_1 t$_1$ hopes YOU$_F$ cite him$_1$].

Unintuitive. . . but ok? No: in (10) Givenness is satisfied, period!

(10) Cally [λ_1 t$_1$ said she$_1$ left] but *she$_1$ DIDN'T$_F$ leave.

Empirics aside, this is *weird*. Bound variables *have values in their local contexts* (though from the 'outside' the idea that they have values may seem strange, cf. Fine 2003, 2007). Givenness as currently stated **discards** those values.

Consider: presupposition satisfaction is checked in a local context:

(11) If there's an escalator in 18SEM, the escalator in 18SEM is hidden.

(12) Each of these students$_i$ brought their$_i$ laptop.

If the congruence constraint was a kind of presupposition (as has often been proposed), it would be surprising if it was not also checked 'in situ'.

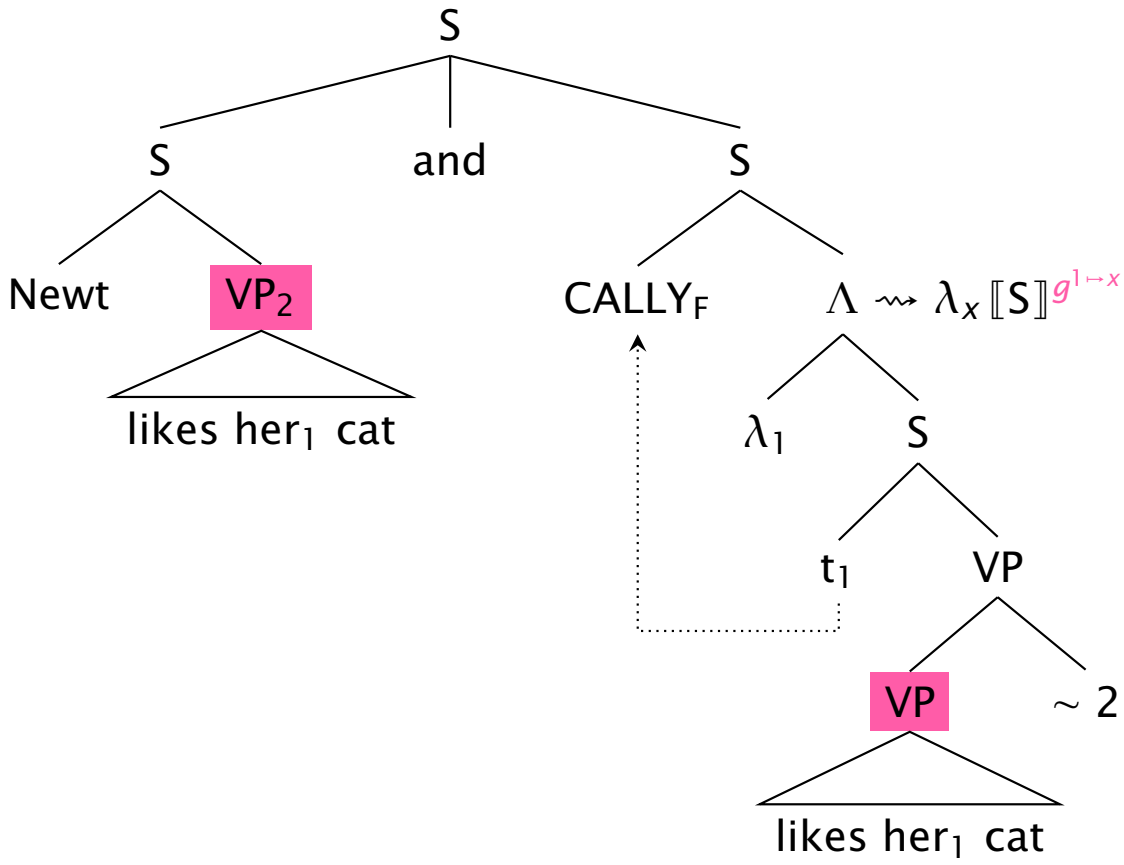
There is an alternative. Rooth's (1992a) $\sim$ works in situ, requiring its associate B to be congruent with the value of a variable n:

$$[\![B \sim n]\!]^g := \begin{cases} [\![B]\!]^g \text{ if } g(n) \in [\![B]\!]^g_f \\ \text{undefined otherwise} \end{cases}$$

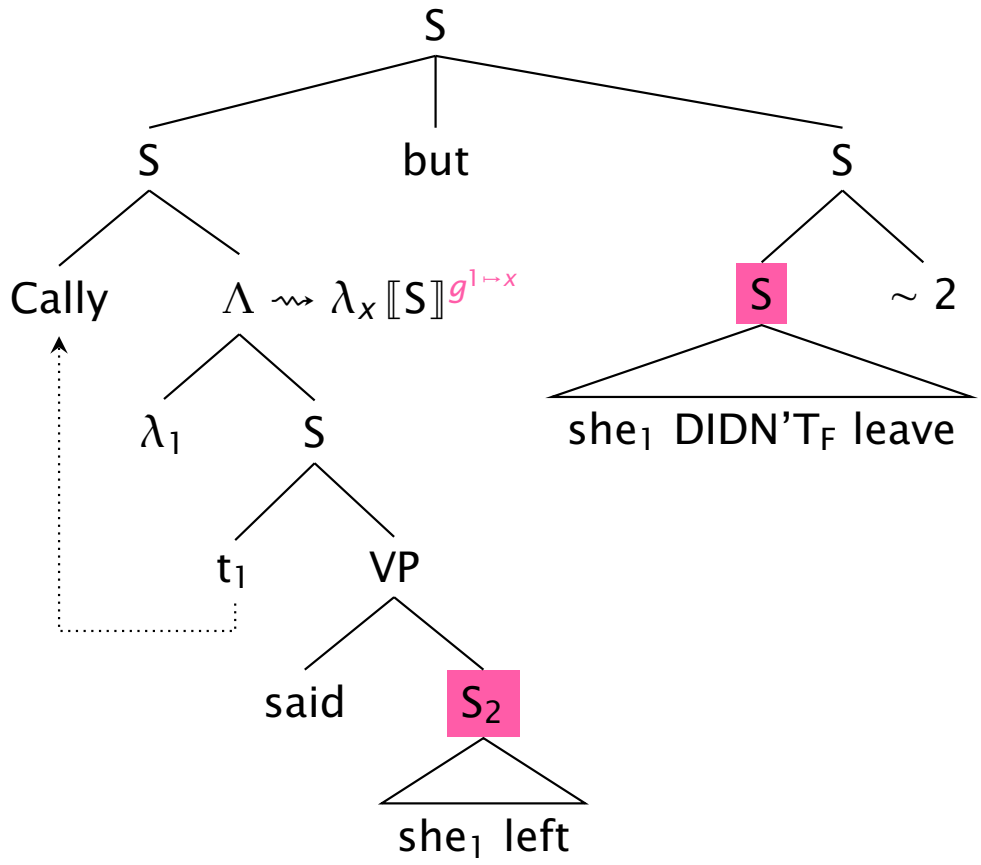
B and the $[\![A]\!]$ stored at n may be eval'd at **different assignments**.

Rooth doesn't treat $\sim$ as a Givenness operator. But it can be repurposed as one.

I'm adopting a semantic theory of alternatives for concretness, but these points apply equally to syntactic theories of alternatives (Katzir 2007, Fox & Katzir 2011).



$$[\![\text{likes her}_1\ \text{cat}]\!]^{1\mapsto\text{mary}} \notin [\![\text{likes her}_1\ \text{cat}]\!]_f^{1\mapsto\text{cally}} \quad \#$$



$$[\![\text{she}_1\ \text{left}]\!]^{1\mapsto\text{cally}} \notin [\![\text{she}_1\ \text{DIDN'T}_F\ \text{leave}]\!]_f^{1\mapsto\text{mary}} \quad \#$$

We update Schwarzschild (1999) so that Givenness is checked in situ:

- **Givenness:** If *B* isn't F-marked, it must be Given ⊣
- *B* is **Given** iff it is the sister of ∼ ⊣
- **AvoidF:** F-mark as little as possible (w/o violating Givenness) ⊣

See Büring (2016) for discussion of a very similar system

Akan data due to Augustina Owusu (p.c.):

(13) Kofi re-pa Kwame ho.
Kofi PROG-pass Kwame body
'Kofi is overtaking Kwame'

Deebi! KWAME na ɛ-re-pa KOFI ho no.
No! Kwame FOC 3SG-PROG-pass Kofi body DEF
'No, KWAME is overtaking KOFI.'

No, though usually treated as DEF marker (cf. Renans 2018), can mark Givenness.

We stand in need of one more revision:

(14) Steph [λ_1 t_1 liked his$_1$ shot] and SETH$_F$ [λ_2 t_2 liked his$_2$ shot].

While $\cong$ is met in the green, it isn't in the red! (Very much like 'rebinding'.)

$$[\![\text{his}_1\ \text{shot}]\!]^{1\mapsto\text{steph}} \not\in [\![\text{his}_2\ \text{shot}]\!]^{2\mapsto\text{seth}}_{f} \quad \#$$

Givenness must be weakened, on pain of being unsatisfiable:

- **Givenness:** Non-F-marked *B* must be Given, or dominated by a node that is $\dashv$

This is a new argument for something similar to "Maximize Background".

Truckenbrodt 1995, Wagner 2006, 2012, Büring 2008, 2016

The basic patterns are reproduced with indexical expressions:

(15) (I'm the best.) No, I_F am! / Yes, you are.

But there is a striking disanalogy in *index-dependency*:

(16) In '92 the president was a Bush. *In '04 [the PRESIDENT]$_F$ was a Bush.

Givenness relates *meanings* via $\sim$. We've seen ample evidence that the meanings of pronouns (indexicals) saturate the assignment (context).

Data like (16) suggest meaning doesn't saturate the index:

$$[\![\alpha]\!]^{c,g} = \ldots \lambda_{(w,t)} \ldots \qquad \textbf{not} \qquad [\![\alpha]\!]^{c,g,(w,t)} = \ldots$$

A better theory of ellipsis

Ellipsis requires identity.

(17) I saw an elk from France. Did YOU_F (see an elk from France)?

(18) I saw her, but YOU_F DIDN'T_F (see her).

Sloppy readings are easy to accommodate:

(19) Mary [λ_i t_i likes her_i office], but SUE_F DOESN'T_F (λ_j t_j like her_j office).

Sag characterized *A* and *E* here as 'alphabetic variants', a relation inspired by the λ-calculus notion of α-equivalence (though distinct).

Keenan (1971), Sag (1976), Williams (1977)

Sloppy pronouns don't need to be bound inside *E* ('**rebinding**'):

(20) John$_i$'s mom likes him$_i$. BILL$_{F,j}$'s mom DOESN'T$_F$ (like him$_j$).

(21) Bagels$_i$ [I like t$_i$]. DONUTS$_{F,j}$ [I DON'T$_F$ (like t$_j$)].

(22) Every dog$_i$ thinks I like it$_i$. Every CAT$_{F,j}$ thinks I DON'T$_F$ (like it$_j$).

(23) If I see a cat$_i$ I pet it$_i$. If I see a DOG$_{F,j}$ I DON'T$_F$ (pet it$_j$).

Same range of interpretations available under deaccenting. Givenness is implicated.

See Hirschbühler 1982, Evans 1988, Jacobson 1992, Rooth 1992b, Hardt 1993, Fiengo & May 1994, Tomioka 1999, Takahashi & Fox 2005, and many others.

Two-part theory of ellipsis licensing (Rooth 1992b)

Ellipsis is licensed whenever the following two conditions are satisfied:

- Syntactic: $A \approx E$ Syntactic identity **up to variable names**[?]
- Semantic: $\Gamma[A] \cong \Delta[E]$ A and E are (in) **congruent** structures

Note that $\cong$ is the **ex situ** congruence relation.

John [λ_1 t_1's mom likes him$_1$] $\cong$ BILL$_F$ [λ_2 t_2's mom does (like him$_2$)]

$\text{likes}(\text{mom}(\text{j}), \text{j}) \quad \in \quad \{\text{likes}(\text{mom}(x), x) \mid x : \text{e}\}$

Binding in the elliptical clause guarantees that congruence is satisfied.

In general, the interaction of binding and alternatives creates complications (Poesio 1996, Shan 2004, Romero & Novel 2013, Charlow 2019b). This won't affect any of my points.

Hard to oversell how successful, illuminating this approach has been.

- Congruence is a feature of grammar not specific to ellipsis (Schwarzschild 1999, Büring 2016, cf. Tancredi 1992, Fox 1999).

The syntactic condition is unfortunate (Merchant 2001), in tension with other data.

Something akin to congruence is present even in dissenters from the overall Roothian picture (e.g., Merchant 2001, Kehler 2000, building on Hobbs 1979).

Why not just coindex the sloppy pronoun and its correlate in *A*?

$$\text{Mary}_1\ [\text{t}_1\ \text{likes her}_1\ \text{office}] \cong \text{SUE}_{F,1}\ [\text{t}_1\ \text{does (like her}_1\ \text{office)}]$$

$$\text{likes}(\text{m}, \text{office}(\text{m})) \quad \in \quad \{\text{likes}(x, \text{office}(x)) \mid x : \text{e}\}$$

Actually, this needs to be *ruled out*:

(24) Newt likes her_1 cat and *CALLY_F [λ_1 t_1 does (like her_1 cat)] too.

(25) Steph hopes I cite him_1 and *SETH_F [λ_1 t_1 hopes YOU_F (cite him_1)].

(26) Cally [λ_1 t_1 said she_1 left] but *she_1 DIDN'T_F (leave).

No Meaningless Coindexing (NMC) (Heim 1997: 202)

If an LF contains an occurrence of a variable v that is bound by a node α, then all occurrences of v in this LF must be bound by the same node α.

- Sag defined a sense of 'α-variance' distinct from λ-calculus, to similar effect.
- Like bans on redundancy, trying to get variables to be less variable-like.

Sag 1976, Tomioka 1995, Romero 1998, Sauerland 1998, 2004, Kennedy 2004, 2014, Takahashi & Fox 2005, Takahashi 2006, Hartman 2011, Roelofsen 2011, Crnič 2017.

The difficulties here are entirely due to using an **ex situ** $\cong$.

They vanish with an in situ congruence mechanism, e.g., $\sim$. The LFs generating impossible readings cannot satisfy $\sim$. There is no need for NMC.

(27) Newt likes her$_1$ cat and CALLY$_F$ [λ_1 t$_1$ does #(like her$_1$ cat)] too.

(28) Al hopes I cite him$_1$ and BO$_F$ [λ_1 t$_1$ #hopes YOU$_F$ (cite him$_1$)].

(29) Cally [λ_1 t$_1$ said she$_1$ left] but #she$_1$ DIDN'T$_F$ (leave).

Getting rid of NMC means we can require exact identity in ellipsis,

(30) John$_i$'s mom likes him$_i$. BILL$_{F,i}$'s mom DOESN'T$_F$ (like him$_i$).

Why might we want this? Ellipsis *sites* exhibit variable-like behavior.

(31) When John has to cook, he doesn't want to (cook).
When he has to CLEAN, he doesn't (want to clean) either.

(32) John bought the books he was supposed to (buy _).
But he READ the books he WASN'T (supposed to read _).

Strongly suggests that an anaphora-like process undergirds ellipsis resolution But anaphora is a relation based on *exact identity* (of meaning).

Gardent (1991), Hardt (1994, 1999), Schwarz (2000), Tomioka (2008), Elbourne (2008)

The dynamics of ~

What does it mean for A_n, the antecedent of $B \sim n$, to bear an index?

- Could mean A_n binds $B \sim n$
- Could mean the two are merely coreferential

Treating B's Givenness in situ via $\sim$ speaks in favor of **binding**.

Intuitively the second conjunct counts as Given in light of the first:

(33) Every boy$_1$ said [Seth likes him$_1$]$_2$ and [STEPH$_F$ likes him$_1$] $\sim$ 2.

Yet this is impossible if $\sim$ and its 'antecedent' are merely coreferential. That requires there to be a contextual value for 2 such that, for any boy x:

$$g(2) \in \{\text{like}\,(y, x) \mid y : \text{e}\}$$

The focus set varies with x! No single value for $g(2)$ can do all this work. [At best, $g(2)$ will be 'about' one of the relevant boys.]

If *Seth likes him*$_1$ **binds** $\sim$ *2*, the value of 2 shifts boy-by-boy:

every boy [λ_1 ... [Seth likes him$_1$] [λ_2 t$_2$ and [STEPH$_F$ likes him$_1$] $\sim$ 2]]

a	likes(seth, a)
b	likes(seth, b)
c	likes(seth, c)

$g(2) \in \{\text{likes}(x, \text{a}) \mid x : \text{e}\}$ ✓

$g(2) \in \{\text{likes}(x, \text{b}) \mid x : \text{e}\}$ ✓

$g(2) \in \{\text{likes}(x, \text{c}) \mid x : \text{e}\}$ ✓

Givenness/$\sim$ are often said to be *anaphoric* (Rooth 1992a, 2016, Schwarzschild 1999). Treating $\sim$ in situ forces us to take this seriously.

The occurrences of $\sim$ in (34) and (35) are *donkey pro-forms*.

(34) If [a cat_6 [Mary likes t_6]$_5$] you can bet that [SUE_F $LOVES_F$ it_6] $\sim$ 5

(35) If [[the copier or the fax]$_7$ [you use t_7]$_8$] [I_F $CAN'T_F$ (use it_7)] $\sim$ 8

So $\sim$ participates in the same binding configs as pronouns (cf. Partee 1973).

See also Rooth & Partee 1982, Stone 1992, Fiengo & May 1994, Charlow 2012, 2015

Some extensions

On the other hand, whereas binding seems sensitive to linearity (roughly), it's well known that $\sim$ satisfaction can be cataphoric (Rooth 1992a):

(36) An AMERICAN$_F$ farmer was talking to a CANADIAN$_F$ farmer.

Brasoveanu & Szabolcsi (2013) argue that this shows $\sim$ imposes itself *after* the sentence has been composed — i.e., is 'post-suppositional'.

(37) A-mo hashitta. 'A ran away too'

(38) A-mo B-mo hashitta. 'A and B ran away'

To get a flavor for post-suppositions, let's consider a paradigm use-case: marking dependent interpretations (Henderson 2014, Kuhn 2017, Law 2018).

(39) Every boy saw a movie. Some even enjoyed it.

(40) Every boy saw a-RED movie. (Requires multiple movies seen.)

The context reflects the dependency between boys and movies seen:

b_1	m_1
b_2	m_2
b_3	m_3

} 3 assignments

This dependency can be anaphorically retrieved as in (39), or required to **post-suppositionally** yield multiple movies, as in (40).

See van den Berg 1996, Nouwen 2003, Brasoveanu 2007 on plural dynamic semantics

(41) I saw t_i [the man YOU_F did (see t_j)]$_i$.

(42) I saw t_i [a book about the man YOU_F did (*see t_j)]$_i$.

Kennedy 1994, 2014, Sauerland 1998, 2004, Fox 2002, Jacobson 2000, 2004, 2009

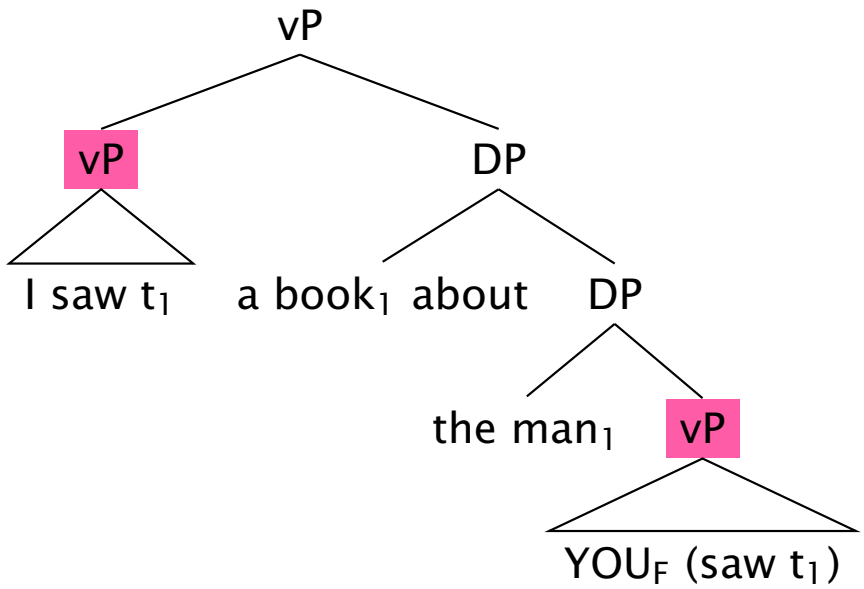
Heim (1997) proposes to explain the data as a failure of $\cong$.

(43) [I saw t_i]$_n$ [the man$_i$ [YOU$_F$ did (see t_i)] $\sim$ n].

(44) [I saw t_i]$_n$ [a book$_i$ about the man$_j$ [YOU$_F$ did (*see t_j)] $\sim$ n].

I saw t_i $\ncong$ YOU$_F$ saw t_j, whence the ungrammaticality of (44).

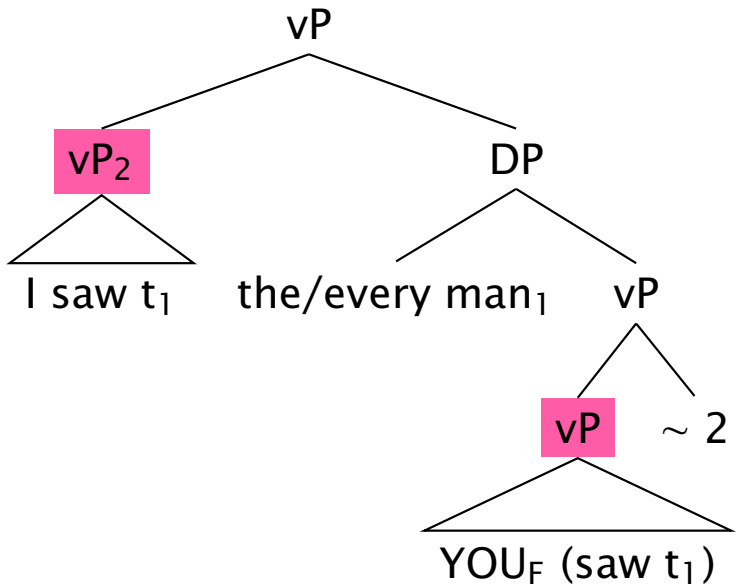
Ex situ $\cong$ relies on variable names, and thus on NMC (to avoid spurious $\cong$).



There is no way for ~ to relate the vPs, even with coindexing: the first trace evaluates to a book; the second trace evaluates to a man.

Jacobson (2004, 2009) argues something very similar within a variable-free system.

But how is ~ satisfied in the *good* cases? A configuration like the one below looks good at first, but remember that ~ 2 needs be bound!



The DP necessarily binds into vP_2. How can vP_2 bind ~ 2?

See Koster-Moeller & Hackl 2008 for some of the complexities of using ~ in ACD.

Recall from earlier that $\sim$ satisfaction can be symmetric. As Brasoveanu & Szabolcsi argue, this suggests that $\sim$ satisfaction is post-suppositional.

(45) An AMERICAN$_F$ farmer was talking to a CANADIAN$_F$ farmer.

(46) A-mo B-mo hashitta. 'A and B ran away'

Notably anticipatory stress is common (obligatory?) in ACD:

(47) I$_F$ read everything YOU$_F$ did.

$$[\underbrace{\text{John read } t_1}_{2}] \; [\text{everything}^1 \; \underbrace{\text{MARY}_F \text{ did } (\text{read } t_1)}_{2\sim 3}]$$

a	$\text{read}(j, a)$	$\{\text{read}(x, a) \mid x : e\}$	✓
b	$\text{read}(j, b)$	$\{\text{read}(x, b) \mid x : e\}$	✓
c	$\text{read}(j, c)$	$\{\text{read}(x, c) \mid x : e\}$	✓

Should $\sim$ require satisfaction in every row (assignment), or would something weaker be appropriate?
The weaker notion could be consistent with the head-identity effects noted by Sauerland (1998, 2004).

(48) Every third grade boy likes his mom.
And every FOURTH$_F$ grade boy likes his mom.

(49) Every third grade boy likes his mom.
And every FOURTH$_F$ grade boy likes HIS$_F$ mom.

Sauerland (1998, 2000), Jacobson (2000), Dimitriadis (2001), Mayr (2012)

What is the focused bound pronoun contrasting with?

In light of the non-focused variant, why isn’t this overfocusing?

$$\overbrace{\text{Every TGB}^{1}\ [\text{t}_1\ \text{likes}\ \underbrace{\text{his}_1}_{2}\ \text{mom}]}^{5}.\ \overbrace{\text{Every FGB}_{\text{F}}{}^{3}\ [\text{t}_3\ \text{likes}\ \underbrace{\text{HIS}_{\text{F},3}}_{2\sim4}\ \text{mom}]}^{5\sim6}.$$

a	mom a	d	{mom d, mom a, ...}	✓
b	mom b	e	{mom e, mom b, ...}	✓
c	mom c	f	{mom f, mom c, ...}	✓
...	...	...	...	...

$$\underbrace{\text{Every TGB}^{1}\ [\text{t}_1\ \text{likes}\ \text{his}_1\ \text{mom}]}_{2}.\ \underbrace{\text{Every FGB}_{\text{F}}{}^{3}\ [\text{t}_3\ \text{likes}\ \text{his}_3\ \text{mom}]}_{2\sim4}.$$

Wrapping up

Congruence is a compositional, anaphoric, dynamic process.

Indices matter a lot less for ellipsis and deaccenting than thought. They help determine values for variables. But it's the *values* that are important.

Facilitates big simplifications in grammar (e.g., no NMC), exact-identity-oriented theories of ellipsis (at last!), and offers a fresh perspective on some old facts.

Thanks for listening!

van den Berg, Martin H. 1996. *Some aspects of the internal structure of discourse: The dynamics of nominal anaphora*. University of Amsterdam Ph.D. thesis.

Brasoveanu, Adrian. 2007. *Structured nominal and modal reference*. Rutgers University Ph.D. thesis. https://semanticsarchive.net/Archive/TFjZGZjN/.

Brasoveanu, Adrian & Anna Szabolcsi. 2013. Presuppositional *Too*, postsuppositional *Too*. In Maria Aloni, Michael Franke & Floris Roelofsen (eds.), *The dynamic, inquisitive, and visionary life of ϕ, ?ϕ, and $\Diamond\phi$: A festschrift for Jeroen Groenendijk, Martin Stokhof, and Frank Veltman*, 55–64. University of Amsterdam. http://festschriften.illc.uva.nl/Festschrift-JMF/.

Büring, Daniel. 2008. What's new (and what's given) in the theory of focus? *Annual Meeting of the Berkeley Linguistics Society* 34(1). 403–423. https://doi.org/10.3765/bls.v34i1.3586.

Büring, Daniel. 2016. *Intonation and meaning*. Oxford: Oxford University Press. https://doi.org/10.1093/acprof:oso/9780199226269.001.0001.

Charlow, Simon. 2012. Cross-categorial donkeys. In Maria Aloni, Vadim Kimmelman, Floris Roelofsen, Galit W. Sassoon, Katrin Schulz & Matthijs Westera (eds.), *Logic, Language and Meaning*, vol. 7218 (Lecture Notes in Computer Science), 261–270. Springer Berlin Heidelberg. https://doi.org/10.1007/978-3-642-31482-7_27.

Charlow, Simon. 2015. Givenness, compositionally and dynamically. In Eric Baković (ed.), *Short 'schrift for Alan Prince*. https://princeshortschrift.wordpress.com/squibs/charlow.

Charlow, Simon. 2019a. A modular theory of pronouns and binding. Unpublished ms., Rutgers University. https://ling.auf.net/lingbuzz/003720.

Charlow, Simon. 2019b. The scope of alternatives: indefiniteness and islands. To appear in *Linguistics and Philosophy*. https://doi.org/10.1007/s10988-019-09278-3.

Crnič, Luca. 2017. Free choice under ellipsis. *The Linguistic Review* 34(2). 249–294. https://doi.org/10.1515/tlr-2017-0002.

Dimitriadis, Alexis. 2001. Function domains in variable-free semantics. In Rachel Hastings, Brendan Jackson & Zsöfia Zvolensky (eds.), *Proceedings of Semantics and Linguistic Theory 11*, 134–151. Ithaca, NY: Cornell University.

Elbourne, Paul. 2008. Ellipsis sites as definite descriptions. *Linguistic Inquiry* 39(2). 191–220. https://doi.org/10.1162/ling.2008.39.2.191.

Evans, Frederic. 1988. Binding into anaphoric verb phrases. In Joyce Powers & Kenneth de Jong (eds.), *Proceedings of the 5th Annual Eastern States Conference on Linguistics*, 122–129.

Fiengo, Robert & Robert May. 1994. *Indices and identity*. Cambridge, MA: MIT Press.

Fine, Kit. 2003. The role of variables. *The Journal of Philosophy* 100(12). 605–631. http://www.jstor.org/stable/3655524.

Fine, Kit. 2007. *Semantic relationism*. Blackwell Publishing Ltd. https://doi.org/10.1002/9780470690826.

Fox, Danny. 1999. Focus, parallelism and accommodation. In Tanya Matthews & Devon Strolovitch (eds.), *Proceedings of Semantics and Linguistic Theory 19*, 70–90. Ithaca, NY: Cornell University. https://doi.org/10.3765/salt.v9i0.2819.

Fox, Danny. 2002. Antecedent-contained deletion and the copy theory of movement. *Linguistic Inquiry* 33(1). 63–96. https://doi.org/10.1162/002438902317382189.

Fox, Danny & Roni Katzir. 2011. On the characterization of alternatives. *Natural Language Semantics* 19(1). 87–107. https://doi.org/10.1007/s11050-010-9065-3.

Gardent, Claire. 1991. Dynamic semantics and VP-ellipsis. In Jan van Eijck (ed.), *Logics in AI: European workshop JELIA '90 Amsterdam, The Netherlands, September 10–14, 1990 proceedings*, 251–266. Berlin, Heidelberg: Springer Berlin Heidelberg. https://doi.org/10.1007/BFb0018446.

Griffiths, James. 2019. Beyond MaxElide: An investigation of Ā-movement from elided phrases. *Linguistic Inquiry* 50(3). 571–607. https://doi.org/10.1162/ling_a_00317.

Hardt, Daniel. 1993. *VP ellipsis: Form, meaning, and processing*. University of Pennsylvania Ph.D. thesis. https://repository.upenn.edu/dissertations/AAI9331786.

Hardt, Daniel. 1994. Sense and reference in dynamic semantics. In Paul Dekker & Martin Stokhof (eds.), *Proceedings of the Ninth Amsterdam Colloquium*, 333–348.

Hardt, Daniel. 1999. Dynamic interpretation of verb phrase ellipsis. *Linguistics and Philosophy* 22(2). 187–221. https://doi.org/10.1023/A:1005427813846.

Hartman, Jeremy. 2011. The semantic uniformity of traces: Evidence from ellipsis parallelism. *Linguistic Inquiry* 42(3). 367–388. https://doi.org/10.1162/LING_a_00050.

Heim, Irene. 1997. Predicates or formulas? Evidence from ellipsis. In Aaron Lawson (ed.), *Proceedings of Semantics and Linguistic Theory 7*, 197–221. Ithaca, NY: Cornell University. https://doi.org/10.3765/salt.v7i0.2793.

Henderson, Robert. 2014. Dependent indefinites and their post-suppositions. *Semantics and Pragmatics* 7(6). 1–58. https://doi.org/10.3765/sp.7.6.

Hirschbühler, Paul. 1982. VP-deletion and across-the-board quantifier scope. In James Pustejovsky & Peter Sells (eds.), *Proceedings of the North East Linguistic Society 12*, 132–139. Amherst, MA: GLSA.

Hobbs, Jerry R. 1979. Coherence and coreference. *Cognitive Science* 3(1). 67–90. https://doi.org/10.1207/s15516709cog0301_4.

Jacobson, Pauline. 1992. Antecedent contained deletion in a variable-free semantics. In Chris Barker & David Dowty (eds.), *Proceedings of Semantics and Linguistic Theory 2* (OSU Working Papers in Linguistics 40), 193–213. https://doi.org/10.3765/salt.v2i0.3027.

Jacobson, Pauline. 2000. Paychecks, stress, and variable-free semantics. In Brendan Jackson & Tanya Matthews (eds.), *Proceedings of Semantics and Linguistic Theory 10*, 65–82. Ithaca, NY: Cornell University. https://doi.org/10.3765/salt.v10i0.3103.

Jacobson, Pauline. 2004. Kennedy's puzzle: What I'm named or who I am? In Kazuha Watanabe & Robert B. Young (eds.), *Proceedings of Semantics and Linguistic Theory 14*, 145–162. Ithaca, NY: Cornell University. https://doi.org/10.3765/salt.v14i0.2911.

Jacobson, Pauline. 2009. Do representations matter or do meanings matter: The case of antecedent containment. In Erhard Hinrichs & John Nerbonne (eds.), *Theory and evidence in semantics*, 81–107. Stanford: CSLI Publications.

Katzir, Roni. 2007. Structurally-defined alternatives. *Linguistics and Philosophy* 30(6). 669–690. https://doi.org/10.1007/s10988-008-9029-y.

Keenan, Edward L. 1971. Names, quantifiers, and the sloppy identity problem. *Research on Language & Social Interaction* 4(2). 211–232. https://doi.org/10.1080/08351817109370257.

Kehler, Andrew. 2000. Coherence and the resolution of ellipsis. *Linguistics and Philosophy* 23(6). 533–575. https://doi.org/10.1023/A:1005677819813.

Kennedy, Christopher. 1994. Argument contained ellipsis. Linguistic Research Center Report LRC 94-03. UC Santa Cruz.

Kennedy, Christopher. 2004. Argument contained ellipsis revisited. Unpublished ms., Northwestern University.

Kennedy, Christopher. 2014. Predicates *and* formulas: Evidence from ellipsis. In Luka Crnič & Uli Sauerland (eds.), *The art and craft of semantics: A festschrift for Irene Heim*, vol. 1 (MIT Working Papers in Linguistics), 253–277. https://semanticsarchive.net/Archive/jZiNmM4N/.

Koster-Moeller, Jorie & Martin Hackl. 2008. Quantifier scope constraints in ACD: Implications for the syntax of relative clauses. In Natasha Abner & Jason Bishop (eds.), *Proceedings of the 27th West Coast Conference on Formal Linguistics*, 301–309. Somerville, MA: Cascadilla Proceedings Project.

Kratzer, Angelika. 1991. The representation of focus. In Arnim von Stechow & Dieter Wunderlich (eds.), *Semantics: An international handbook of contemporary research*, chap. 40, 825–834. Berlin: de Gruyter.

Kuhn, Jeremy. 2017. Dependent indefinites: the view from sign language. *Journal of Semantics* 34(3). 407–446. https://doi.org/10.1093/jos/ffx007.

Law, Jess H.-K. 2018. Binominal *each* and the internal structure of distributivity. Unpublished ms., Rutgers University. https://ling.auf.net/lingbuzz/004289.

Mayr, Clemens. 2012. Focusing bound pronouns. *Natural Language Semantics* 20(3). 299–348. https://doi.org/10.1007/s11050-012-9083-4.

Merchant, Jason. 2001. *The syntax of silence: Sluicing, islands, and the theory of ellipsis*. Oxford: Oxford University Press.

Nouwen, Rick. 2003. *Plural pronominal anaphora in context*. (Netherlands Graduate School of Linguistics Dissertations 84). Utrecht: LOT.

Partee, Barbara H. 1973. Some structural analogies between tenses and pronouns in English. *The Journal of Philosophy* 70(18). 601–609. http://www.jstor.org/stable/2025024.

Poesio, Massimo. 1996. Semantic ambiguity and perceived ambiguity. In Kees van Deemter & Stanley Peters (eds.), *Semantic Ambiguity and Underspecification* (CSLI Lecture Notes 55), 159–201. Stanford: CSLI Publications.

Renans, Agata. 2018. Definite descriptions of events in situation semantics: progressive interpretation in Ga (Kwa). Unpublished ms.

Roelofsen, Floris. 2011. Free variable economy. *Linguistic Inquiry* 42(4). 682–697. https://doi.org/10.1162/LING_a_00066.

Romero, Maribel. 1998. *Focus and reconstruction effects in wh-phrases*. University of Massachusetts, Amherst Ph.D. thesis.

Romero, Maribel & Marc Novel. 2013. Variable binding and sets of alternatives. In Anamaria Fălăuș (ed.), *Alternatives in Semantics*, chap. 7, 174–208. London: Palgrave Macmillan UK. https://doi.org/10.1057/9781137317247_7.

Rooth, Mats. 1985. *Association with focus*. University of Massachusetts, Amherst Ph.D. thesis.

Rooth, Mats. 1992a. A theory of focus interpretation. *Natural Language Semantics* 1(1). 75–116. https://doi.org/10.1007/BF02342617.

Rooth, Mats. 1992b. Ellipsis redundancy and reduction redundancy. In Stephen Berman & Arild Hestvik (eds.), *Proceedings of the Stuttgart Workshop on Ellipsis, no. 29 in Arbeitspapiere des SFB 340*. Stuttgart: University of Stuttgart.

Rooth, Mats. 2016. Alternative semantics. In Caroline Féry & Shinichiro Ishihara (eds.), *The Oxford Handbook of Information Structure*, chap. 2, 19–40. Oxford: Oxford University Press. https://doi.org/10.1093/oxfordhb/9780199642670.013.19.

Rooth, Mats & Barbara H. Partee. 1982. Conjunction, type ambiguity, and wide scope 'or'. In Daniel P. Flickinger, Marlys Macken & Nancy Wiegand (eds.), *Proceedings of the First West Coast Conference on Formal Linguistics*, 353–362. Stanford: Stanford Linguistics Association.

Sag, Ivan A. 1976. *Deletion and logical form*. Massachusetts Institute of Technology Ph.D. thesis. https://hdl.handle.net/1721.1/16401.

Sauerland, Uli. 1998. *On the making and meaning of chains*. Massachusetts Institute of Technology Ph.D. thesis. http://hdl.handle.net/1721.1/9671.

Sauerland, Uli. 2000. The content of pronouns: Evidence from focus. In Brendan Jackson & Tanya Matthews (eds.), *Proceedings of Semantics and Linguistic Theory 10*, 167–184. Ithaca, NY: Cornell University. https://doi.org/10.3765/salt.v10i0.3109.

Sauerland, Uli. 2004. The interpretation of traces. *Natural Language Semantics* 12(1). 63–127. https://doi.org/10.1023/B:NALS.0000011201.91994.4f.

Schlenker, Philippe. 2005. Non-redundancy: Towards a semantic reinterpretation of Binding Theory. *Natural Language Semantics* 13(1). 1–92. https://doi.org/10.1007/s11050-004-2440-1.

Schwarz, Bernhard. 2000. *Topics in ellipsis*. University of Massachusetts, Amherst Ph.D. thesis. https://scholarworks.umass.edu/dissertations/AAI9960789.

Schwarzschild, Roger. 1993. The contrastiveness of associated foci. Unpublished ms., Rutgers University.

Schwarzschild, Roger. 1997. Interpreting accent. Unpublished ms., Rutgers University. https://semanticsarchive.net/Archive/TRlNTY5Z.

Schwarzschild, Roger. 1999. Givenness, AvoidF and other constraints on the placement of accent. *Natural Language Semantics* 7(2). 141–177. https://doi.org/10.1023/A:1008370902407.

Shan, Chung-chieh. 2004. Binding alongside Hamblin alternatives calls for variable-free semantics. In Kazuha Watanabe & Robert B. Young (eds.), *Proceedings of Semantics and Linguistic Theory 14*, 289–304. Ithaca, NY: Cornell University. https://doi.org/10.3765/salt.v14i0.2901.

Stone, Matthew. 1992. *Or* and anaphora. In Chris Barker & David Dowty (eds.), *Proceedings of Semantics and Linguistic Theory 2* (OSU Working Papers in Linguistics 40), 367–385. https://doi.org/10.3765/salt.v2i0.3037.

Takahashi, Shoichi. 2006. *Decompositionality and identity*. Massachusetts Institute of Technology Ph.D. thesis. http://hdl.handle.net/1721.1/34201.

Takahashi, Shoichi & Danny Fox. 2005. MaxElide and the re-binding problem. In Effi Georgala & Jonathan Howell (eds.), *Proceedings of Semantics and Linguistic Theory 15*, 223–240. Ithaca, NY: Cornell University. https://doi.org/10.3765/salt.v15i0.3095.

Tancredi, Chris. 1992. *Deletion, deaccenting and presupposition*. Massachusetts Institute of Technology Ph.D. thesis. http://hdl.handle.net/1721.1/12893.

Tomioka, Satoshi. 1995. [Focus]$_F$ restricts scope: Quantifier in VP ellipsis. In Mandy Simons & Teresa Galloway (eds.), *Proceedings of Semantics and Linguistic Theory 5*, 328–345. Ithaca, NY: Cornell University. https://doi.org/10.3765/salt.v5i0.3117.

Tomioka, Satoshi. 1999. A sloppy identity puzzle. *Natural Language Semantics* 7(2). 217–241. https://doi.org/10.1023/A:1008309217917.

Tomioka, Satoshi. 2008. A step-by-step guide to ellipsis resolution. In Kyle Johnson (ed.), *Topics in ellipsis*, chap. 9, 210–228. Cambridge: Cambridge University Press. https://doi.org/10.1017/cbo9780511487033.009.

Truckenbrodt, Hubert. 1995. *Phonological phrases: Their relation to syntax, focus, and prominence*. Massachusetts Institute of Technology Ph.D. thesis. http://hdl.handle.net/1721.1/11075.

Wagner, Michael. 2006. Givenness and locality. In Masayuki Gibson & Jonathan Howell (eds.), *Proceedings of Semantics and Linguistic Theory 16*, 295–312. Ithaca, NY: Cornell University. https://doi.org/10.3765/salt.v16i0.2938.

Wagner, Michael. 2012. Focus and givenness: a unified approach. In Ivona Kučerová & Ad Neeleman (eds.), *Contrasts and positions in information structure*, 102–147. Cambridge: Cambridge University Press. https://doi.org/10.1017/CBO9780511740084.007.

Williams, Edwin S. 1977. Discourse and logical form. *Linguistic Inquiry* 8(1). 101–139. https://www.jstor.org/stable/4177974.